EPA Draft Proposal for ENERGY STAR® Set-top Box Program
June 1999

www.energystar.gov

Introduction

EPA is considering expanding its ENERGY STAR Home Electronics Program to include energy-efficiency guidelines for set-top boxes. *For purposes of this proposal, EPA has defined a set-top box as a commercially available electronic product encased in a single housing whose purpose is to receive and translate signals that are then sent to a television for viewing.*

As set-top boxes are becoming more visible in the home electronics market, EPA would like to do the following.

- Work with industry-leading manufacturers to find innovative ways to decrease the substantial power consumption of these products when in standby mode; and
- Recognize the more energy-efficient products available in the market. Those products that meet EPA's criteria will be able to carry the ENERGY STAR label, a well-known symbol for energy efficiency.

Energy generation and use for set-top boxes as well as many other products is a major cause of air pollution. By recognizing and promoting energy-efficient designs, we can use less energy and generate less air pollution.

Program Objective

The primary objective of the ENERGY STAR Programs is to work with industries to design and market energy-efficient products that have the same or better performance than conventional models. These products also will potentially reduce air pollution because they waste less energy. By collaborating, EPA and manufacturers can offer consumers ENERGY STAR-labeled set-top boxes that provide the high-performance features consumers want in addition to saving money on utility bills and helping prevent air pollution.

ENERGY STAR Philosophy

As it designs and implements ENERGY STAR Programs, EPA adheres to the following five tenets.

- ✓ Foster public-private partnerships to expand markets for energy-efficient products
- ✓ Reduce air pollution by decreasing carbon dioxide and other emissions leading to global warming and urban smog
- ✓ Recognize the most energy-efficient product models in the market through the use of the ENERGY STAR label
- ✓ Maintain customer satisfaction by increasing energy efficiency without sacrificing performance
- ✓ Encourage innovation and competition by developing energy-efficiency guidelines that are technology neutral

EPA's Interest in Set-top Boxes

Through its initial research, EPA has uncovered the following information about national energy use and costs to operate set-top boxes, which has contributed to its interest in developing energy-efficiency guidelines.

Testing by the American Council for an Energy-Efficient Economy (ACEEE) and Lawrence Berkeley National Laboratory (LBNL) has indicated that the amount of energy used when off is nearly equal to the amount needed to operate set-top boxes in their primary function.

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Cable, satellite, and Internet access set-top boxes, as well as video game consoles, consume an estimated 7 billion kWh per year, producing pollution roughly equivalent to that of over 1 million cars.

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Americans spend over $618 million on utility bills to power these devices. Set-top boxes consume much of this energy while consumers are not watching television or using these products.

Product Scope

Below is a list of products that EPA is considering for the Program. Given that these products share many common design characteristics and it is administratively more efficient to maintain one versus several programs, EPA intends to cover a variety of products under one Set-top Box Program.

- Cable TV set-top boxes (digital and analog)
- Digital TV converter set-top boxes
- Internet access devices
- Video game consoles
- Direct Broadcast Satellite (DBS) systems
- Videophone set-top boxes
- Digital TV receivers (e.g., TiVo and Replay TV)

Observed Modes of Operation

Below are brief descriptions of several common operational modes for set-top devices that EPA has observed in tests conducted by/for EPA. While preliminary, these definitions are provided as a means to facilitate discussion with interested manufacturers.

Standby: The mode in which the product is connected to the power source, is possibly producing status information or time readout, is waiting to be switched to the active mode, and produces no signal. The product may exit the standby mode through automatic timer activation, direct activation by the user, or a remote control command from the user. In standby mode, the product is substantially shut down but may continue to perform some functions (e.g., remote control sensing).

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Standby-Active: The mode in which the product is connected to a power source, is possibly producing status information or time readout, is communicating with a head end or data provider, and is waiting to be switched to the active mode. In standby-active mode, the product appears to be "off" to the user.

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Active: The mode in which the product is operational and has been turned "on" by the user. The product is connected to a power source and is receiving, sending, processing, translating, and/or recording signals. The power requirement in this mode is typically greater than the power requirement in standby mode.

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Disconnect: The mode in which the product is disconnected from all external power sources.

Process of Developing Energy-Efficiency Specifications

Similar to the other Home Electronics Programs (i.e., TV/VCR and Home Audio/DVD), EPA is very interested in developing energy-efficiency guidelines for set-top box products. The goal of these guidelines is to develop a program that will encourage tangible product energy savings without sacrificing user satisfaction with the product. All specifications considered by EPA will be carefully evaluated based on energy savings potential and market conditions. EPA would like to review suggestions and data from interested manufacturers and is also interested in learning whether manufacturers think guidelines should be developed for operational modes in addition to standby, such as standby-active and active.

Proposed Time Line

Below is EPA's proposed time line for developing an ENERGY STAR Set-top Box Program. While this time line is flexible, EPA anticipates that program development tasks will generally follow this schedule.

Please note that the Program launch date and the date to begin shipping labeled products are not included below. These dates will be determined based on input from manufacturers. EPA welcomes any suggestions from manufacturers.

Program Development Task	June 1 - 15	June 16 - 30	July 1 - 15	July 16 - 31	August 1 – 15	August 16 - 31	Sept. 1-15
Distribute EPA Proposal	→						
Conduct Industry Meeting		→	→	→			
Circulate Draft Specifications				→	→		
Review Industry Comments					→	→	
Finalize Specifications							→

Next Steps

Manufacturers interested in learning more are encouraged to take the following steps:

1. Inform EPA of your interest and provide contact information (name, company, address, phone, fax, and especially e-mail address, if available) to one of the program representatives below. Your company will then be notified about any industry meetings and receive a copy of the draft specifications when available.
2. Visit the ENERGY STAR Web site at www.energystar.gov for more information on all of the ENERGY STAR Programs, EPA and DOE's new product development activities, and the Set-top Box Program.
3. Submit a proposal(s) or other suggestions with supporting energy savings data to EPA for review and discussion.
4. Attend industry meeting in Washington, D.C. area - Tuesday, July 27th, 1999 at 2:30 P.M.

Program Contacts

Andrew Fanara
U.S. EPA
202 564-9019
fanara.andrew@epa.gov

Craig Hershberg
U.S. EPA
202 564-1251
hershberg.craig@epa.gov

Robin Gross Clark
ICF, Incorporated (Contractor to EPA)
202 862-1223
rgross@icfkaiser.com